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May 4, 1966

MEMORANDUM FOR CHAIRMAN SEABORG
 COMMISSIONER PALFREY
 COMMISSIONER RAMEY
 COMMISSIONER TAPE

THROUGH GENERAL MANAGER (Signed) Ensi DeRenzis *Ensi*

SUBJECT: CURRENT STATUS OF THYROID NODULES AMONG THE MARSHALLESE
 EXPOSED TO FALLOUT FROM THE BIKINI TEST OF MARCH 1, 1954

In our last memorandum on this subject, October 11, 1965, it was noted that a cumulative total of 11 instances of nodular thyroid glands had been found in the 69 surviving Marshallese who had been exposed to fallout from the subject test while on Rongelap and on Ailingnae. All but one of these cases were in young people who were less than 10 years old at the time of exposure. The single exception was in a 41-year-old woman (approximately 30 at time of exposure) who was found to have a carcinoma of the thyroid at operation.

Dr. Robert A. Conard of the Medical Department of Brookhaven National Laboratory, and leader of the annual (or more often) medical surveys of these people, has just returned from the latest survey conducted during February and March of 1966. He reports that an additional five cases of nodular thyroids have been diagnosed in this group. The present cumulative incidence is shown in the following table.

Age at Exposure	Number Exposed	Total Incidence of Nodules Through March 1966	
		Number	Percent
1-5	16	9	55
6-10	9	4	44
11-15	7	0	--
16-20	5	0	--
> 20	<u>32</u>	<u>3</u>	<u>9</u>
	69	16	25

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Fifty-five of the 69 were on Rongelap Island and received estimated whole body doses of 175 R plus possible doses of 700 to 1400 rem to their thyroids from the radioiodines. The remaining 14 (six were 1-10 years of age) were visiting on Ailingnae, a nearby island, and received estimated doses of 69 R whole body exposure, plus less certain but probably small thyroid doses. None of the six children who were on Ailingnae have thus far developed nodules, so that the incidence of nodules among the 19 more heavily exposed on Rongelap when 1-10 years old is 13-19 or 68 percent. Two of the three adults were on Rongelap and one was on Ailingnae.

Thus far only six of the above, including the adult found to have cancer, have been subjected to surgery. The current plans are to bring five of the remaining 10 cases to Brookhaven for further diagnostic study and possible surgery during May 1966. One is a 46-year-old adult woman and the others are girls presently 15, 13, 13, and 20 years old. They will be accompanied by the Rongelap schoolteacher who will act as interpreter. The travel and treatment of these people has been developed with the cooperation of the Honorable Wilfred Goding, High Commissioner, Trust Territory of the Pacific Islands.

All these Marshallese presumably have been taking tetraiodothyronine, a synthetic thyroid hormone, for the last seven months. The intent of the therapy is to prevent and/or cause regression of the nodules. Some success has been seen, but it is too soon to draw conclusions.

Forty children who were on Utirik at the time and received estimated doses of 14 R plus proportionately smaller internal thyroid doses were examined for nodular thyroids; none were found.

Among 194 unexposed controls who are now living on these islands, three cases of thyroid nodules were found, all in adults more than 47 years. Other forms of thyroid disease were not seen.

You will be kept informed of the progress of these studies; the next noteworthy item will be the clinical and possibly surgical findings in the five Marshallese coming to Brookhaven.

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C. L. Dunham, M.D.
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